



INTERNATIONAL WEEK OF NARROW TEXTILES

**MARCH 09 - 13, 2020
IN DRESDEN**

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**TECHNISCHE
UNIVERSITÄT
DRESDEN**



**LEADING IN FIBRE
& TEXTILE TECHNOLOGY**
Forschungsinstitut
der Exzellenzuniversität

**INTERNATIONAL WEEK OF NARROW TEXTILES
MARCH 09-13, 2020, IN DRESDEN**

MONDAY, MARCH 09		TUESDAY, MARCH 10			WEDNESDAY, MARCH 11	THURSDAY, MARCH 12	FRIDAY, MARCH 13
Braiding Technology	New Materials & Sensors	New Materials & Sensors	Braiding Technology	Narrow Weaving/ Multilayer Weaving/ 3D Weaving	Narrow Weaving/ Multilayer Weaving/ 3D Weaving	Assembling of Textile Products	Assembling of Textile Products
TRAINING	LECTURES	TRAINING	LECTURES	TRAINING	LECTURES	LECTURES	TRAINING
TU Dresden, Breitscheidstr. 78-82, 01237 Dresden B78 Gebäude D/F	TU Dresden, Bergstr. 66, 01069 Dresden Chemische Institute (CHE) / Hydrowissenschaften Etage 0 Hörsaal S91	TU Dresden, Breitscheidstr. 78-82, 01237 Dresden B78 Gebäude D/F	TU Dresden, Bergstr. 66, 01069 Dresden Chemische Institute (CHE) / Hydrowissenschaften Etage 0 Hörsaal S91	TU Dresden, George-Bähr-Str. 3c, 01069 Dresden Zeuner-Bau Room-No. 322B	TU Dresden, Bergstr. 66, 01069 Dresden Chemische Institute (CHE) / Hydrowissenschaften Etage 0 Hörsaal S91	TU Dresden, Bergstr. 66, 01069 Dresden Chemische Institute (CHE) / Hydrowissenschaften Etage 0 Hörsaal S91	TU Dresden, Hohe Str. 6, 01069 Dresden ITM Untergeschoss (Labore)
Evening Event „Kurfürstenschänke“ An der Frauenkirche 13, 01067 Dresden		Evening Event „OCAKBASI“ Gewandhausstr. 2, 01067 Dresden			Evening Event „Schießhaus“ Am Schießhaus 19, 01067 Dresden	Evening Event „Feldschlöschchenstammhaus“ Budapester Straße 32, 01069 Dresden	

**MONDAY,
MARCH 09**

TRAINING

09:00 am - 03:00 pm:

This course will address the relations between the carrier occupation and the structure of the braids. The common carrier occupations will be tested practically, theoretically, and by means of simulation software. The rules for braiding with missing carriers (partial carrier occupation) will be discussed. Finally, the programming of the variational braiding machine with computer-controlled switches will be explained. After this course, participants will be able to prepare carrier arrangements for devices for tubular braids with different structures and samples with constant and variable geometries on the variation braiding machine. All participants will receive a free, fully functional 3-month test versions of the softwares „TexMind Braider“ and „TexMind Computer Controlled Braiding Machine Configurator.“

07:00 pm **Evening Event**
„Kurfürstenschänke“,
An der Frauenkirche 13,
01067 Dresden

**TUESDAY,
MARCH 10**

LECTURES

08:00 am **Registration & Coffee**

08:30 am **Welcome & Greetings**

Innovative braiding technology allows the design of new products

Daniel Denninger (et al.), Herzog GmbH, Germany

Package Braiding

Bernd Rehrmann, Körting Nachfolger Wilhelm Steeger GmbH & Co. KG, Germany

Improved bond formation based on novel profiled braided yarn constructions for high load-bearing concrete structures

Anwar Abdkader (et al.), TU Dresden (ITM), Germany

10:00 am **Coffee Break**

Continuous blow molding - braided support structures

Peter Schneider, Thoenes Dichtungstechnik GmbH, Germany

Optimized carrier construction for high-performance fibers

Patrick Sauer (et al.), TU Dresden (ITM), Germany

***Mechanical properties of braids with bifurcations**

Desalegn Beshaw Aychilie (et al.), Ethiopian Textile and Fashion Technology Institute (EITEX, BDU), Äthiopien (et al.)

***Digitalization of textile process chain - Industry 4.0**

Herbert Witzgall, update texware GmbH, Germany

11:45 am **Lunch Break**

Virtual development of braided structures

Yordan Kyosev, TU Dresden (ITM), Germany

Hybrid braided ropes for safety related applications in the personal transportation technique

Wolfram Vogel, Vogel GUT ACHTEN, Germany

Live cycle recognition of running high-performance fiber ropes

Annett Schmieder, TU Chemnitz, Germany

02:15 pm **Coffee Break**

Braid-based surgical manipulator with tunable stiffness

Zufeng Shang, Tianjin University, China

Carrier independent error detection system for braiding of carbon fibers

Stephan Maidl, TU München (LCC), Germany

Automatic programming of roboter assisted braiding machines for significant reduced preparatory times

Holger Ahlborn, IFB, University Stuttgart, Germany

03:35 pm **End**

07:00 pm **Evening Event**

„Ocakbasi“,
Gewandhausstr. 2,
01067 Dresden

**Short lecture*

MONDAY, MARCH 09

LECTURES

08:00 am Registration & Coffee

08:30 am Welcome & Greetings

Creative functional improvements of filaments through a flexible, modular organized spinning system

Steffen Müller-Probandt, Dienes Werke für Maschinenteile GmbH & Co, Germany

Imaging for quality control of multifunctional polymer and fiber materials

Holger Großmann, Anton Paar GmbH, Austria

Silvering yarns for smart textile applications

Julia Töbelmann, Statex Produktions- und Vertriebs GmbH, Germany

10:00 am Coffee Break

New achievements in the area of the smart textiles

Lieva Van Langenhove, University Gent, Belgium

Textile threads with sensory and actuating functions

Isabel Trindade, Amann & Söhne GmbH & Co. KG, Germany

11:45 am Lunch Break

Technical embroidery - a versatile opportunity for smart textiles

Melanie Hoerr, ZSK Technical Embroidery Systems, Germany

Functionalization/ Smart textiles at ITM

Iris Kruppke (et al.), TU Dresden (ITM), Germany

LCSens-textile-based lactate sensors

Johannes Wendler, TU Dresden (ITM), Germany

02:15 pm Coffee Break

In-situ repair of CFRP parts by laminate-integrated patches

David Hoffmann, TU Dresden (ITM), Germany

03:35 pm End

07:00 pm Evening Event

*„Kurfürstenschänke“,
An der Frauenkirche 13,
01067 Dresden*

TUESDAY, MARCH 10

TRAINING

09:00 am - 03:00 pm:

This course offers hands-on training on the topic of „New Materials and Sensors“. Based on practical examples from current research and development efforts, numerous possibilities for the functionalization of filament yarns / textile fabrics will be introduced. The challenge consists in the combination of specific fiber properties and electronics. Wet and melt spinning technologies, the functionalization of high-performance fibers, measuring methods based on sensors, and the corresponding connection technology will be presented. To deepen their knowledge on functional yarns, participants are made familiar with various measuring and testing methods for the determination of the rheology of spinning solutions, the exploration and representation of surface topographies and a specimens' period range, the quantification of roughness, and investigations on adhesive, material and sensor properties.

07:00 pm Evening Event

*„Ocakbasi“,
Gewandhausstr. 2,
01067 Dresden*

NARROW WEAVING/^{MULTILAYER WEAVING/ 3D WEAVING} MARCH 10-11, 2020

**TUESDAY,
MARCH 10**

TRAINING

09:00 am - 03:00 pm:

Training - Computer-Aided Development of Multilayer- and 3D Woven Fabrics

During the workshop, we will convey the basics of weave pattern development for complex woven structures using concrete examples from practice and our research. In the first part, the methods for the development of multilayer structures are developed. The second part of the training shows the technology for the development and weaving of complex 3D structures. This is done using the example of folding structures, pockets and branched tube structures for the medical and fiber composite sectors. The theoretical basics are supplemented by exercises with the pattern software of the company EAT GmbH „The DesignScope Company“. The software tool 3D Weave is presented, which enables the efficient weave pattern development for technical 3D fabrics.

07:00 pm Evening Event
„Ocakbasi“,
Gewandhausstr. 2,
01067 Dresden

**WEDNESDAY,
MARCH 11**

LECTURES

08:00 am Registration & Coffee

08:30 am Welcome & Greetings

The revolution in the narrow textile industry - the potential of MDW® technology

Roger Hasler, Jakob Müller AG, Switzerland

Shuttle looms for complex 3D fabrics in medical and fiber composite applications

Daniel Gehendges, Mageba International GmbH, Germany

Comez crochet machines today

Fulvio Festari, COMEZ International s.r.l., Italy

10:00 am Coffee Break

Meeting the market requirement „Increasing customer benefits through less wear and tear“

Marcel Neher, Groz Beckert, Germany

Investigation on product and process parameters of 3D warp interlock fabrics

Francois Boussu, ENSAIT, France

***Digitalization of textile process chain - Industry 4.0**

Herbert Witzgall, update texware GmbH, Germany

11:45 am Lunch Break

Development of hollow fabrics for electronic integration in medical textiles

Sina Borczyk, KARL OTTO BRAUN GmbH & Co. KG, Germany

Computational modeling of woven structures

Louise Brown, The University of Nottingham, Great Britain

Modeling the internal architecture of 3D woven fabrics with complex features

Adam Thompson, Bristol University, Great Britain

02:15 pm Coffee Break

Simulation-based development of woven fabrics for medical products

Tobias Georg Lang (et al.), TU Dresden (ITM), Germany

Complex narrow woven fabrics for implants

Philipp Schegner (et al.), TU Dresden (ITM), Germany

03:35 pm End

07:00 pm Evening Event

„Schießhaus“,
Am Schießhaus 19,
01067 Dresden

**Short lecture*

THURSDAY, MARCH 12

LECTURES

08:00 am Registration & Coffee

08:30 am Welcome & Greetings

Ultrasonic welding

Julia Töbelmann, Statex Produktions- und Vertriebs GmbH, Bremen, Germany

Requirements for the assembly of technical textiles - solutions of the DA Group

Henrik Schütte, Dürkopp Adler Group, Germany

Optimisation of sewing process for better seam performance of functional textiles

Adnan Mazari, TU Liberec, Czech Republic

10:00 am Coffee Break

Development of technology for 3D Tailor Fiber Placement

Frank Rattay (et al.), Pfeil GmbH (et al.), Germany

Automated manufacturing of multi-matrix composites for technical textiles

Axel Spickenheuer (et al.), Leibniz-Institut für Polymerforschung Dresden e. V. (IPF), Germany

11:45 am Lunch Break

Textile laser welding

Cristin Konkart, Leister Technologies AG, Switzerland

Innovative Handling-Technologies for textile production processes

Aline Defranceski, J. Schmalz GmbH, Germany

02:15 pm Coffee Break

Assembling technology for textile products from the perspective of an ERP provider

Herbert Witzgall, update texware GmbH, Kulmbach, Germany

Additive manufacturing as an alternative assembly technique for textile-based products

Dustin Ahrendt (et al.), TU Dresden (ITM), Germany

Ultrasonic inspection of textile welding seams

Kathrin Pietsch (et al.), TU Dresden (ITM) (et al.), Germany

03:35 pm End

07:00 pm Evening Event

„Feldschlösschen“
Budapester Straße 32,
01069 Dresden

FRIDAY, MARCH 13

TRAINING

09:00 am - 03:00 pm:
„Hands-on the machines“

The participants are instructed at each station with the latest in the latest machines and devices and can test their own materials with the technologies under the guidance of the professionals.

- Ultrasonic welding, Fa. Nukleus
- Assembly of technical textiles, Dürkopp Adler
- Possibilities for automation and special machine construction, Jens Kühnert, Pfeil GmbH,
- Cutting of special textiles, RH-Scheidtechnik, Solingen